

Mathematic Standards Matrix
FINANCIAL SERVICES
November 13, 2008

FINANCIAL SERVICES Standards/Measurement Criteria		MATH STANDARDS
		Strand #, Concept #, Grade Level Performance Objective # (<i>College Work Readiness Level Standards are italicized</i>)
STANDARD 1.0 – ANALYZE BANKING AND RELATED FINANCIAL SERVICES		
1.1	Compare products available at financial institutions such as banks and credit unions	<p>Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, High School Level PO 3: Solve interest problems.</p> <p>Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 5: Solve problems involving compound interest.</i> <i>PO 6: Demonstrate the relationship between</i></p> <ul style="list-style-type: none"> • <i>simple interest and linear growth and</i> • <i>compound interest and exponential growth.</i> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>
1.2	Explain the role of the Federal Reserve system	See Note
1.3	Explain the role of Federal Deposit Insurance Corporation (FDIC) and National Credit Union Association (NCUA)	See Note

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STANDARD 2.0 – EXAMINE SECURITY SYSTEMS AND PROCEDURES FOR FINANCIAL INSTITUTIONS		
2.1	Identify security systems and procedures, e.g., alarms, opening/closing procedures, robbery, bomb threats	See Note
2.2	Identify ways checks and balance systems protect financial institutions from monetary loss, such as dual control	See Note
2.3	Analyze methods to protect customer privacy	See Note
2.4	List preventive measures to protect from fraud	See Note
2.5	Analyze procedures to prevent identity theft	See Note

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STANDARD 3.0 – ANALYZE TYPES OF SECURITIES AND RELATED INVESTMENTS		
3.1	Investigate investment opportunities to include in a diversified portfolio	<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), <i>College Work Readiness Level</i> <i>PO 1: Solve problems by estimating and computing with one-variable and two-variable data.</i></p> <p>Strand 5: Structure and Logic, Concept 1: Algorithms and Algorithmic Thinking, High School Level PO 1: Select an algorithm that explains a particular mathematical process; determine the purpose of a simple mathematical algorithm.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 1: Use a variety of approaches (inductive and deductive reasoning, estimations, generalizations, formal and informal methods of proof) to analyze algorithms.</i></p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>
3.2	Examine characteristics of investments such as stocks, bonds, commodities, or mutual funds	See Note

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3.3	Track and research domestic/international investments	<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level PO 1: Draw inferences about data sets from lists, tables, matrices, and plots. PO 2: Organize collected data into an appropriate graphical representation with or without technology. PO 3: Display data, including paired data, as lists, tables, matrices, and plots with or without technology; make predictions and observations about patterns or departures from patterns. PO 7: Identify misrepresentations and distortions in displays of data and explain why they are misrepresentations or distortions.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 4: Vertex-Edge Graphs, <i>College Work Readiness Level</i> <i>PO 2: Understand, analyze, and apply vertex-edge graphs to model and solve problems related to paths, circuits, networks, and relationships among a finite number of elements, in real-world and abstract settings.</i></p> <p>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level PO 1: Sketch and interpret a graph that models a given context, make connections between the graph and the context, and solve maximum and minimum problems using the graph.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving and Proof, High School Level PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, High School Level PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s). PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>

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3.4	Analyze an investment plan, for example aggressive vs conservative	<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level PO 1: Draw inferences about data sets from lists, tables, matrices, and plots. PO 2: Organize collected data into an appropriate graphical representation with or without technology. PO 3: Display data, including paired data, as lists, tables, matrices, and plots with or without technology; make predictions and observations about patterns or departures from patterns. PO 7: Identify misrepresentations and distortions in displays of data and explain why they are misrepresentations or distortions.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level <i>PO 2: Compare data sets using graphs and summary statistics, including variance and standard deviation, with or without technology.</i></p> <p>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level PO 1: Sketch and interpret a graph that models a given context, make connections between the graph and the context, and solve maximum and minimum problems using the graph.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving and Proof, High School Level PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made. PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>
3.5	Explain the role of the Securities Exchange Commission	See Note
3.6	Explain the stock market's impact on financial investments	See Note
3.7	Examine the various global economic conditions that can impact financial investments	See Note

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STANDARD 4.0— ANALYZE INSURANCE SERVICES		
4.1	Describe the risks and the needs for insurance	Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 2: Probability, High School Level PO 1: Make predictions and solve problems based on theoretical probability models. Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 2: Probability, <i>College Work Readiness Level</i> <i>PO 1: Apply probability concepts to calculate the probability of events and to make informed decisions in practical situations.</i> Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 9: Use mathematical models to represent and analyze personal and professional situations.</i>
4.2	Identify the benefits and characteristics of the different type of insurance, including life, health, property, and liability insurance	Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 9: Use mathematical models to represent and analyze personal and professional situations.</i>
4.3	Explain the type of protection provided by each type of insurance	Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i>
4.4	Differentiate the characteristics of annuity products such as retirement, tax benefits, and estate planning	Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 10: Determine an effective retirement savings plan to meet personal financial goals including IRAs, ROTH accounts, and annuities.</i> Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 9: Use mathematical models to represent and analyze personal and professional situations.</i>
4.5	Explain the role of the state's department of insurance	See Note

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STANDARD 5.0 – ANALYZE CREDIT AND LENDING		
5.1	Examine characteristics of secured and unsecured credit	See Note
5.2	Examine real estate investments	See Note
5.3	Analyze credit and loan applications	Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, <i>College Work Readiness Level</i> <i>PO 7: Find domain, range, intercepts, zeros, asymptotes, and points of discontinuity of functions.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i>
5.4	Analyze credit reports and scoring	See Note
5.5	Analyze each type of mortgage loan for example fixed or adjustable.	Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, <i>College Work Readiness Level</i> <i>PO 7: Find domain, range, intercepts, zeros, asymptotes, and points of discontinuity of functions.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i>
5.6	Examine the various conditions that can impact interest rates	See Note

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STANDARD 6.0 – DEMONSTRATE CUSTOMER SERVICE SKILLS FOR A FINANCIAL SERVICE ORGANIZATION		
6.1	Demonstrate proper telephone etiquette	See Note
6.2	Demonstrate customer/client communications and transactions	See Note
6.3	Exhibit appropriate techniques to interview and conference with customers/clients	See Note
6.4	Demonstrate how to resolve a customer's complaint	See Note
6.5	Explain financial impact on business of a satisfied customer	See Note
STANDARD 7.0 – ANALYZE TYPES OF REAL ESTATE INVESTMENTS		
7.1	Examine types of real estate investments for example commercial and residential	See Note
7.2	Explore the responsibilities and liabilities of owning rental property	See Note

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STANDARD 8.0 – DEVELOP BUSINESS AND FINANCIAL MANAGEMENT PRACTICES NEEDED FOR ENTREPRENEURS		
8.1	Develop criteria and create a list of professionals to help start a business	See Note
8.2	Identify legal matters that affect business finances including labor laws, contracts, licensing, intellectual property, zoning and tax laws	See Note
8.3	Research necessary registrations such as business name, articles of incorporation, EIN, transaction privilege tax, vendor license	See Note
8.4	Explain basic income tax laws and government regulation of financial services	Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 8: Apply a variety of strategies to use tax tables and determine, calculate, and complete yearly federal income tax.</i>
8.5	Explain business risk and insurance	Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, <i>College Work Readiness Level</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i>
8.6	Compare owning versus leasing of property and/or capital	Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, <i>College Work Readiness Level</i> <i>PO 7: Find domain, range, intercepts, zeros, asymptotes, and points of discontinuity of functions.</i> Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, <i>College Work Readiness Level</i> <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i>

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STANDARD 9.0 – EVALUATE THE ROLE OF SMALL BUSINESS IN THE FINANCIAL SERVICES INDUSTRY		
9.1	Evaluate the role of small business in the economy: local, state, national, and international economics	See Note
9.2	List the factors including personal traits, which contribute to the success and failure of small business	See Note
9.3	Compare/contrast the advantages/disadvantages of sole proprietorships, partnerships and corporations	See Note
9.4	Analyze the relationship of customer service and customer satisfaction on the success of a business	See Note
STANDARD 10.0 – ANALYZE BUSINESS FINANCIAL MANAGEMENT INFORMATION		
10.1	Analyze short- and long-term budgetary plans	Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level PO 1: Draw inferences about data sets from lists, tables, matrices, and plots. Strand 5: Structure and Logic, Concept 1: Algorithms and Algorithmic Thinking, High School Level PO 1: Select an algorithm that explains a particular mathematical process; determine the purpose of a simple mathematical algorithm. Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i>

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10.2	Analyze financial data to produce accurate reports	<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level PO 1: Draw inferences about data sets from lists, tables, matrices, and plots.</p> <p>Strand 5: Structure and Logic, Concept 1: Algorithms and Algorithmic Thinking, High School Level PO 1: Select an algorithm that explains a particular mathematical process; determine the purpose of a simple mathematical algorithm.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving and Proof, High School Level PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>
10.3	Compile transaction data to report financial information	See Note
10.4	Use federal, state and local regulations to determine appropriate financial practices	See Note
10.5	Examine a client's money management patterns including risk tolerance and financial goals	<p>Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, College Work Readiness Level <i>PO 9: Develop a personal budget including debit, checking, and savings accounts by interpreting multiple personal budget examples.</i> <i>PO 10: Determine an effective retirement savings plan to meet personal financial goals including IRAs, ROTH accounts, and annuities.</i> <i>PO 11: Compare and contrast the role of insurance as a device to mitigate risk and calculate expenses of various options.</i></p> <p>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level <i>PO 10: Differentiate, interpret, apply, and develop concepts in the context of personal and professional situations.</i></p>
10.6	Identify procedures and documents to create a financial plan	See Note

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